

CLAIMS

What is claimed is:

1. A cleaning device for a printing cylinder (2) of a printing machine, comprising a guide rail (3) placed approximately parallel to the printing cylinder (2), a longitudinally traveling carriage (4) is mounted for movement on the guide rail and a washing apparatus (5) is releasably connected to the carriage, wherein the guide rail (3) is movable for positioning of the washing apparatus (5) against the printing cylinder (2), and the washing apparatus (5) is connected with a source of supply by supply lines for detergent, air, and electrical current, the supply lines extend inside the guide rail (3) from the washing apparatus (5) to a stationary connection point (7), and the guide rail (3) encloses internally a suction wastewater channel (14), which is located between upper and lower sections (15, 16) of a belt (19) which reciprocates between turn-around rollers (17, 18) for transport of the carriage (4), the upper belt section (15) forms an effectively sealing cover for an open longitudinal side of the suction wastewater channel (14), and in an area of the carriage (4), at least one connection fitting (25) to an interior of the suction wastewater channel (14) is provided and in an area of the stationary connection point (7), a connection pipe (26) for connection to the wastewater channel (14) is provided and the remaining supply lines run inside the guide rail (3) from the stationary connection point (7) to the carriage (4).
2. A cleaning device in accordance with Claim 1, wherein the stationary connection point (7) for the supply lines leading to the carriage (4) is located at one end of the guide rail (3) and for guiding the supply lines within the guide rail (3), a drag chain (28) is provided.

a 3. A cleaning device in accordance with Claim 1, wherein ⁱⁿ ~~an~~ area of the carriage (4),
a ^{the} at least one connection fitting (25) penetrates into the interior of the suction
a wastewater channel through the ~~traveling~~ belt (19) and engages sealingly in
a ^{at least one opening} connection ~~openings~~ of the washing apparatus (5) on the carriage (4).

a 4. A cleaning device in accordance with Claim 1, wherein the ~~circulating~~ belt (19) is
a constructed as an endless belt and ^a the drive connection to the carriage (4) is formed
a ^{at least one} by the connection fitting (25) ^a which sealingly ^{penetrating} penetrates the belt (19).

a 5. A cleaning device in accordance with Claim 1, where the supply lines, ~~which run~~
a ~~beside the suction wastewater channel (14) within the guide rail (3),~~ comprise at least
one hot water and detergent hose, an energy feed cable and a control cable.

6. A cleaning device in accordance with Claim 1, wherein the carriage (4) and the
washing apparatus (5) attachable therewith include on their mutually facing sides,
electrical plug-in connections, as well as suction drainage couplings, which are
designed as self connecting, self coupling complementary elements and for
appropriate positioning for coupling of the carriage (4) and the washing apparatus
(5), at least one positioning pin (29) engaging in a complementary opening is
furnished.

a 7. A cleaning device in accordance with Claim 1, wherein ~~in the case of the stationary~~
a ^{a2} ~~connection position (7),~~ quick separating plug-in connections ^{a2} ~~for connection to the~~
a ~~supply unit are provided.~~

- a 8. A cleaning device in accordance with Claim 1, wherein the ^{source of} supply unit includes at least one electronic control apparatus, ~~preferably a programmable controller,~~
a especially with an interface to a superimposed control of the printing machine, and
a an apparatus for generating hot water, steam, suction, compressed air, as well as
a means for dispensing detergent.
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9. A cleaning device in accordance with Claim 1, wherein one of the turn-around rollers (17, 18) is coupled with a drive motor (24).
10. A cleaning device in accordance with Claim 1, wherein the suction wastewater channel (14) has an essentially U-shaped cross sectional profile (20), the open longitudinal side of which is covered over by a portion (15) of the belt (19),[;] and longitudinal rims of the belt, on a surface distal from the suction wastewater channel (14), are provided with overlapping side bars (23).
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11. A cleaning device, in accord with Claim 10, wherein the belt (19) is a toothed belt, and on an inside surface, possesses continuous grooves (21) near each edge,[;] and the suction wastewater channel (14), with its edges (22) of its open longitudinal side, respectively sealingly engage in the grooves (21).
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12. A cleaning device in accordance with Claim 1, wherein the guide rail (3) has a basin shape, and on an outer side ^{of the basin shape} of the U-legs, guides are formed by U-shaped structural elements (10), for the carriage (4), ^{said carriage covering} ~~which covers~~ the open side of the guide rail (3) and ^{engaging} ~~engages~~ in the U-shaped structural elements (10) with ball bearing supported slides (13).
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13. A cleaning device in accordance with Claim 1, wherein the guide rail (3) includes an open inner cross section for reception of the suction wastewater channel (14) along with the ~~reciprocating~~ belt (19) which is associated therewith, and has a longitudinally neighboring space for the supply lines enclosed in a drag chain (28).
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14. A cleaning device in accordance with Claim 1, wherein the guide rail (3) includes, for forward and back positioning ~~for~~ operations, sliding elements (34) for insertion into holding structures located on ^{ends of the guide rail} its ends, and thrust cylinders (35) are provided for movement, ^{of the guide rail} the cylinders are installed at ends of the guide rail (3) and are coupled to lateral holding means ~~with their thrust elements~~.
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15. A cleaning device in accordance with Claim 1, wherein for connection of the washing apparatus (5) and the carriage (4), penetrative tongues (30) are installed on the washing apparatus (5) ^{and} complementary seatings with plug-in openings (31) are installed ~~and~~ on the carriage (4) and [,] distanced from this connection ~~point~~, a locking connection with a manually activated lever (32) is provided.
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16. A cleaning device in accordance with Claim 1, wherein the washing apparatus (5) has a length which is smaller than about half the length of the printing cylinder (2) ~~to be~~ ~~cleaned~~.
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17. A cleaning device in accordance with Claim 1, wherein the washing apparatus (5) includes at least one rotating brush (6), which ^{is} ~~are~~ connected to a driving mechanism and the ~~rotation~~ driving mechanism is either integrated in the at least one brush (6), or transmits driving power through chain or belt drives to the at least one brush ⁽⁶⁾.

18. A cleaning device in accordance with Claim 17 wherein a cleaning operations area of the at least one brush (6) of the washing apparatus (5) are bordered on both sides by a respective blade cleaner (37), and at least in an underpart of the cleaning operations area one or more suction drainage openings (38) for the accumulating wastewater, detergent mixture are furnished.

19. A cleaning device in accordance with Claim 1, wherein the washing apparatus (5a) includes two ~~some what axis parallel~~ brushes (6), ~~which are~~ installed in two chambers separated from one another ~~and their~~ active cleaning areas ~~are~~ aimed in different directions for simultaneous cleaning of two printing cylinders.

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